

EFFICIENCY IN SME: MALAYSIAN EVIDENCE

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ABSTRACT

Most studies on SMEs in Malaysia have looked at the performance of SMEs, especially by using the qualitative method. However, this study is different from previous studies where it offers a new insight of SMEs by looking at the efficiency of SME. Using 40 companies as the sample, this study analyse whether SME companies have used their current assets efficiently in getting sales. Surprisingly, the results show that most companies are not efficient in managing their current assets to produce sales. Since current asset or working capital is very crucial in running a business, the results might offer an insight of why most SMEs failed in their business.

Keywords: SME, data envelopment analysis, efficiency

INTRODUCTION

The importance of SMEs has long been recognized. In Malaysia, for example, SME accounts for about 99 percent of total business establishments that provide 56 percent of the country's total employment. Moreover, the sector contributes 31 percent of the nation's Gross Domestic Product (GDP) while its share of export is 19 percent of the nation's total export (National SME Development Council, 2010). The government has recognized the substantial contributions of SMEs sectors and has considered the sector as an important vehicle for development and growth in the economy and to contribute in the Economic Transformation Programme (PEMANDU, 2010). Looking at the contribution of SMEs towards the economy, it is vital that the SMEs need to be efficient in managing their companies. Otherwise their role as economic catalyst cannot be realized.

SMEs is said to have problems of managerial know-how, entrepreneurial skill and technical skills (Salleh, 1990; Shahadan et al. 1990; Schmitz, 1982). As a business enterprise, managerial know-how would include the management of their working capital. Working

capital is one of most important ingredient in ensuring that a company can stay longer in the business. Working capital, which refers to current assets, and includes the accounts receivables, cash, inventory and marketable securities will determine whether the company has enough liquidity to run the daily operation. Failure to maintain the liquidity level will cost the company as they will be forced into the financial distress condition. However, although the company must have adequate working capital, the question of how much of those working capital that must be kept in the company is a question that is quite hard to answer. There is a trade-off between holding too much cash and too little cash, and there is a trade-off of having a liberal credit policy, which will increases sales but at the same time increases the amount of receivables, and having a tight credit policy, which will reduces the sales and also reduces the accounts receivables. Another question that the manager must addressed to is whether their current assets are at the optimal level. If the current assets are optimal, do they achieved sales as it is supposed to be or are the assets underutilized?

Most studies regarding SMEs have looked at the qualitative side of SMEs but only a few studies that looked at the quantitative aspects. For example, Altman and Sabato (2007), Luppi *et al.* (2007), Behr and Guttler (2007), and Pederzoli and Torricelli (2010) look at the failure prediction of SME. In their studies, they find factors that lead SMEs companies into bankruptcy. All these authors agree that liquidity, profitability and leverage are the main determinants of bankruptcy for SMEs. Meanwhile, Yang (2006) study the efficiency index of SMEs in Korea while Charoenrat *et al.* (2013) analyse the efficiency level of SMEs in Thailand. Charoenrat *et al.* (2013) find that the weighted average technical efficiency of Thailand manufacturing SMEs is approximately 50 percent, signifying a high level of technical inefficiency. Their model reveals that firm size, firm age, skilled labor, ownership characteristics and location are firm-specific factors that significantly affect the technical inefficiency of production.

Aiming to fulfil the research gap, this study looked at the efficiency level of Malaysian SMEs. To our knowledge, this is among a pioneer study that looks at the efficiency level of SMEs in Malaysia. A major contribution that arises from this study is that the study has shown that a healthy company is not necessary efficient in managing their working capital, which may be the culprit of why SMEs cannot stays longer in the business.

METHODOLOGY

The efficiency of SMEs is measured by using the Data Envelopment Analysis (DEA). The product or service unit efficiency can be calculated by comparing between the outputs and the inputs utilized in the process of the product's or the service production. Graphically, it is shown as below.



The DEA method is a technique that is widely used, especially in the banking industry, to determine the inefficiency decision making unit in the industry. This analysis was first proposed by Charnes, Cooper and Rhodes (1978). DEA is used to evaluate the efficiency of a number of decision making units (DMUs), Each DMUs will have a varying level of inputs and a varying level of outputs. The ratio of outputs to inputs is a measure of efficiency (Berger & Humphrey, 1977). Since DEA focuses on the outliers, it is able to identifies units that achieve the best results and is able to provide information on how each SMEs performs. Consequently, it allows direct comparison to be made against their competitors or peers.

Data

The sample consists of all SME companies in 2009. The list of manufacturing companies and the financial data was obtained from the Companies Commission of Malaysia (CCM). Manufacturing companies were chosen as the sample because this sector contributed 27.6 percent of the country's GDP (Bank Negara Malaysia, 2012).

SME definition by the National SME development council that the annual sales turnover should not exceed RM25million is used to identify the companies. We only use data in 2009 as it reflects the aftermath of world financial crisis.

The number of firms is 277. The cleaning processed is carried out where 22 firms have to be excluded because they do not have the sales figure, 13 firms is excluded because they do not have non-current assets and one is excluded because of negative sales. After the elimination process, the sample consists of 241 firms. Then, a stratified random sampling is carried out where for every six firms, we choose one firm as the sample. Finally, the sample becomes 40 firms.

Variable selection

In order to study the efficiency level of working capital in getting sales, the study uses one input and one output. The input is current assets while the output is sales. Essentially, the study tries to look whether SMEs has used their current assets efficiently to produce sales by using DEA analysis.

RESULTS

The results are shown in table 1. The table show that out of 40 SME firms, only 4 SMEs are efficient while the other 36 SMEs are not efficient in managing their current assets. The efficient firms are Abu Bakar and Ling Sdn. Bhd., Apex Industries Sdn. Berhad, TSH Plantation Sdn. Bhd and Western Digital Sdn. Bhd. The results are very alarming because the management of working capital is very crucial in every business in order for the business to succeed. A higher level of working capital will translate that the company have enough liquidity, good control of their accounts receivables and good in managing their inventory level. However, due to data unavailability, the study cannot make a firm conclusion of why the companies are inefficient in managing their current assets. Perhaps the companies have too many inventories that tied up their cash, or they have a huge amount of accounts receivables and have problems in collecting them or they might carry a large amount of cash which do not provide a higher return. The results (in appendix 1) also show that more than

90 percent of the current assets are not being used to produce sales in six companies, and more than 80 percent assets are not being used to produce sales in five companies.

Table 1 : Data envelopment analysis score for SME companies

No.	DMU	Score
1	ABU BAKAR & LING SDN. BHD.	1
2	UHUP SDN. BHD	0.320140053
3	KUALA PILAH ENG THYE RUBBER CO. SDN. BHD.	7.36E-02
4	VITAL STAR SDN. BHD.	3.40E-02
5	WING KWONG WATCH SDN. BHD.	0.234383328
6	ALPS ELECTRIC (MALAYSIA) SDN. BHD.	0.87696438
7	ADNAN MANUFACTURING & INDUSTRIES SDN. BHD.	6.36E-02
8	UNILEVER (MALAYSIA) HOLDINGS SDN. BHD.	0.533873987
9	AISHAH FOOD INDUSTRIES SDN. BHD.	0.737209077
10	KUAN AH SIEW PLASTICS INDUSTRIES SDN. BHD.	0.212300057
11	BEAUTREND DEVELOPMENT SDN BHD	0.377108187
12	TUTONG RICE VERMICELLI FACTORY SDN BHD.	6.30E-02
13	TRIGLOBAL CORPORATION (M) SDN. BHD.	0.692903716
14	ASIA SLIPWAY & ENGINEERING SDN. BHD	0.26382059
15	WINDWELL AGENCIES SDN BHD	0.161795844
16	AIRAMOS (M) SDN. BHD.	0.574009988
17	KDS GARMENTS SDN. BHD.	0.377632059
18	TRANSICOIL (MALAYSIA) SDN. BHD.	0.32413059
19	YE FERN SDN. BHD.	0.129123574
20	AMTEK SHOES SDN. BHD.	0.130070778
21	WONG SUEKAU SDN. BHD.	5.70E-02
22	BARAM RESOURCES SDN. BHD.	0.12173318
23	ZENBES SDN. BHD.	0.328940926
24	APEX INDUSTRIES SDN.BERHAD	1
25	TUBE HOME (M) SDN. BHD.	0.091364923
26	WONG ENGINEERING ELECTRONICS SDN. BHD.	0.116851502
27	ASIA PACIFIC APPAREL (M) SDN. BHD.	0.237766089
28	KUMPULAN ABEX SDN. BHD.	0.365330211
29	WESTWOOD CORPORATION SDN. BHD.	0.372157407
30	TOYOBO TEXTILE (MALAYSIA) SDN. BHD.	0.346968432
31	TUCK HUA METAL WORKS SDN.BHD.	0.314302163
32	WENGPHA RICE MILL SDN. BHD.	0.556088635
33	ALFAGOMMA-MARDEC SDN. BHD.	0.202673229
34	UNI-VESSEL ENGINEERING (B'WORTH) SDN. BHD.	0.536491871
35	USAHAWAN PSE SDN. BHD.	0.771482915
36	ATLAS EDIBLE ICE SDN. BHD.	0.807920156
37	UNITED DETERGENT INDUSTRIES SDN. BHD.	0.412075488
38	BATA (MALAYSIA) SDN. BHD.	0.483670421
39	TSH PLANTATION SDN. BHD.	1
40	WESTERN DIGITAL (MALAYSIA) SDN. BHD.	1

Table 2 shows that from 40 companies, 23 companies have increasing return to scale while 16 companies have decreasing return to scale. One company has constant return to scale. The DMUs with decreasing return to scale occurs when an increase in all inputs leads to a less than proportional increase in output. This would suggest that for those 16 companies that are having decreasing return to scale, their asset do not generate the necessary sales that it is supposed to generate.

Table 2: Companies return to scale

No.	Company	Return to scale
1	ABU BAKAR & LING SDN. BHD.	Increasing
2	UHUP SDN. BHD	Increasing
3	KUALA PILAH ENG THYE RUBBER CO. SDN. BHD.	Increasing
4	VITAL STAR SDN. BHD.	Increasing
5	WING KWONG WATCH SDN. BHD.	Increasing
6	ALPS ELECTRIC (MALAYSIA) SDN. BHD.	Increasing
7	ADNAN MANUFACTURING & INDUSTRIES SDN. BHD.	Increasing
8	UNILEVER (MALAYSIA) HOLDINGS SDN. BHD.	Increasing
9	AISHAH FOOD INDUSTRIES SDN. BHD.	Increasing
10	KUAN AH SIEW PLASTICS INDUSTRIES SDN. BHD.	Increasing
11	BEAUTREND DEVELOPMENT SDN BHD	Increasing
12	TUTONG RICE VERMICELLI FACTORY SDN BHD.	Increasing
13	TRIGLOBAL CORPORATION (M) SDN. BHD.	Increasing
14	ASIA SLIPWAY & ENGINEERING SDN. BHD	Increasing
15	WINDWELL AGENCIES SDN BHD	Increasing
16	AIRAMOS (M) SDN. BHD.	Increasing
17	KDS GARMENTS SDN. BHD.	Increasing
18	TRANSICOIL (MALAYSIA) SDN. BHD.	Increasing
19	YE FERN SDN. BHD.	Increasing
20	AMTEK SHOES SDN. BHD.	Increasing
21	WONG SUEKAU SDN. BHD.	Increasing
22	BARAM RESOURCES SDN. BHD.	Increasing
23	ZENBES SDN. BHD.	Increasing
24	APEX INDUSTRIES SDN.BERHAD	Constant
25	TUBE HOME (M) SDN. BHD.	Decreasing
26	WONG ENGINEERING ELECTRONICS SDN. BHD.	Decreasing
27	ASIA PACIFIC APPAREL (M) SDN. BHD.	Decreasing

28	KUMPULAN ABEX SDN. BHD.	Decreasing
29	WESTWOOD CORPORATION SDN. BHD.	Decreasing
30	TOYOBO TEXTILE (MALAYSIA) SDN. BHD.	Decreasing
31	TUCK HUA METAL WORKS SDN.BHD.	Decreasing
32	WENGPFA RICE MILL SDN. BHD.	Decreasing
33	ALFAGOMMA-MARDEC SDN. BHD.	Decreasing
34	UNI-VESSEL ENGINEERING (B'WORTH) SDN. BHD.	Decreasing
35	USAHAWAN PSE SDN. BHD.	Decreasing
36	ATLAS EDIBLE ICE SDN. BHD.	Decreasing
37	UNITED DETERGENT INDUSTRIES SDN. BHD.	Decreasing
38	BATA (MALAYSIA) SDN. BHD.	Decreasing
39	TSH PLANTATION SDN. BHD.	Decreasing
40	WESTERN DIGITAL (MALAYSIA) SDN. BHD.	Decreasing

CONCLUSION

The aim of the study is to identify the efficiency score of Malaysian SMEs. The efficiency score is analysed by using data envelopment analysis on 40 manufacturing SMEs. Current asset is used as the input while sales is used as the output. Specifically, the study tries to look at whether the firms have used their current assets efficiently in getting sales. The results reveal that out of 40 SMEs, only four companies have used their current assets efficiently. The study also shows that eleven companies have excessive level of current assets more than 80 percent. In addition, the study finds that sixteen companies are experiencing decreasing return to scale, a condition where an increase in current assets leads to a less than proportional increase in sales.

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APPENDIX 1

No.	DMU I/O	Score Data	Projection	Difference	%
1	ABU BAKAR & LING SDN. BHD.	1			
	INPUT 1	34372	34372	0	0.00%
	OUTPUT 1	4800	4800	0	0.00%
2	UHUP SDN. BHD	0.320140053			
	INPUT 1	149447	47843.97044	-101603.03	-67.99%
	OUTPUT 1	114572	114572	0	0.00%
3	KUALA PILAH ENG THYE RUBBER CO. SDN. BHD.	7.36E-02			
	INPUT 1	781898	57545.03607	-724352.96	-92.64%
	OUTPUT 1	193618	193618	0	0.00%
4	VITAL STAR SDN. BHD.	3.40E-02			
	INPUT 1	2304240	78357.42141	-2225882.6	-96.60%

	OUTPUT 1	363201	363201	0	0.00%
5	WING KWONG WATCH SDN. BHD.	0.234383328			
	INPUT 1	375717	88061.80066	-287655.2	76.56%
	OUTPUT 1	442274	442274	0	0.00%
6	ALPS ELECTRIC (MALAYSIA) SDN. BHD.	0.87696438			
	INPUT 1	119477	104777.0732	14699.927	12.30%
	OUTPUT 1	578473	578473	0	0.00%
7	ADNAN MANUFACTURING & INDUSTRIES SDN. BHD.	6.36E-02			
	INPUT 1	2001913	127267.6254	1874645.4	93.64%
	OUTPUT 1	761730	761730	0	0.00%
8	UNILEVER (MALAYSIA) HOLDINGS SDN. BHD.	0.533873987			
	INPUT 1	293631	156761.9527	136869.05	46.61%
	OUTPUT 1	1002055	1002055	0	0.00%
9	AISHAH FOOD INDUSTRIES SDN. BHD.	0.737209077			
	INPUT 1	239092	176260.7927	62831.207	26.28%
	OUTPUT 1	1160935	1160935	0	0.00%
10	KUAN AH SIEW PLASTICS INDUSTRIES SDN. BHD.	0.212300057			
	INPUT 1	953544	202437.4454	751106.55	78.77%
	OUTPUT 1	1374227	1374227	0	0.00%
11	BEAUTREND DEVELOPMENT SDN BHD	0.377108187			
	INPUT 1	625071.57	235719.6064	389351.96	62.29%
	OUTPUT 1	1645415.94	1645415.94	0	0.00%
12	TUTONG RICE VERMICELLI FACTORY SDN BHD.	6.30E-02			
	INPUT 1	5216295	328853.452	4887441.5	93.70%
	OUTPUT 1	2404287	2404287	0	0.00%
13	TRIGLOBAL CORPORATION (M) SDN. BHD.	0.692903716			
	INPUT 1	530449	367550.083	162898.92	30.71%
	OUTPUT 1	2719594	2719594	0	0.00%
14	ASIA SLIPWAY & ENGINEERING SDN. BHD	0.26382059			
	INPUT 1	1596660	421231.7837	-	-

				1175428.2	73.62%
	OUTPUT 1	3157002	3157002	0	0.00%
15	WINDWELL AGENCIES SDN BHD	0.161795844			
	INPUT 1	2806681	454109.3218	-	-
	OUTPUT 1	3424894	3424894	0	0.00%
16	AIRAMOS (M) SDN. BHD.	0.574009988			
	INPUT 1	943685	541684.616	-	-
	OUTPUT 1	4138473	4138473	0	0.00%
17	KDS GARMENTS SDN. BHD.	0.377632059			
	INPUT 1	1524825	575822.8041	-949002.2	-
	OUTPUT 1	4416637	4416637	0	0.00%
18	TRANSICOIL (MALAYSIA) SDN. BHD.	0.32413059			
	INPUT 1	1952906	632996.5742	-	-
	OUTPUT 1	4882499	4882499	0	0.00%
19	YE FERN SDN. BHD.	0.129123574			
	INPUT 1	5764258	744301.5935	-	-
	OUTPUT 1	5789432	5789432	0	0.00%
20	AMTEK SHOES SDN. BHD.	0.130070778			
	INPUT 1	6567780	854276.2538	-	-
	OUTPUT 1	6685525	6685525	0	0.00%
21	WONG SUEKAU SDN. BHD.	5.70E-02			
	INPUT 1	17449974	994842.4193	-	-
	OUTPUT 1	7830883	7830883	0	0.00%
22	BARAM RESOURCES SDN. BHD.	0.12173318			
	INPUT 1	9333401	1136184.587	-	-
	OUTPUT 1	8982564	8982564	0	0.00%
23	ZENBES SDN. BHD.	0.328940926			
	INPUT 1	3744127	1231596.603	-	-
	OUTPUT 1	9759998	9759998	0	0.00%
24	APEX INDUSTRIES SDN.BERHAD	1			
	INPUT 1	1295330	1295330	0	0.00%
	OUTPUT 1	10279309	10279309	0	0.00%
25	TUBE HOME (M) SDN. BHD.	0.091364923			
	INPUT 1	16964306	1549942.516	-	-
	OUTPUT 1	11653341	11653341	0	0.00%
26	WONG ENGINEERING ELECTRONICS SDN. BHD.	0.116851502			

	INPUT 1	15557611	1817930.216	-	-
	OUTPUT 1	13099553	13099553	0	0.00%
27	ASIA PACIFIC APPAREL (M) SDN. BHD.	0.237766089			
	INPUT 1	9817749	2334327.779	-	-
	OUTPUT 1	15886324	15886324	0	0.00%
28	KUMPULAN ABEX SDN. BHD.	0.365330211			
	INPUT 1	6866195	2508428.467	-	-
	OUTPUT 1	16825869	16825869	0	0.00%
29	WESTWOOD CORPORATION SDN. BHD.	0.372157407			
	INPUT 1	8264033	3075521.092	-	-
	OUTPUT 1	19886219	19886219	0	0.00%
30	TOYOBO TEXTILE (MALAYSIA) SDN. BHD.	0.346968432			
	INPUT 1	11398964	3955080.669	-	-
	OUTPUT 1	24632816	24632816	0	0.00%
31	TUCK HUA METAL WORKS SDN.BHD.	0.314302163			
	INPUT 1	15776408	4958559.161	-	-
	OUTPUT 1	30048149	30048149	0	0.00%
32	WENGPHA RICE MILL SDN. BHD.	0.556088635			
	INPUT 1	9939063.45	5527000.23	-	-
	OUTPUT 1	33115775.96	33115775.96	0	0.00%
33	ALFAGOMMA-MARDEC SDN. BHD.	0.202673229			
	INPUT 1	30868391	6256196.466	-	-
	OUTPUT 1	37050928	37050928	0	0.00%
34	UNI-VESSEL ENGINEERING (B'WORTH) SDN. BHD.	0.536491871			
	INPUT 1	16621241	8917160.685	-	-
	OUTPUT 1	51410984	51410984	0	0.00%
35	USAHAWAN PSE SDN. BHD.	0.771482915			
	INPUT 1	16637511	12835555.49	-	-
	OUTPUT 1	72556841	72556841	0	0.00%
36	ATLAS EDIBLE ICE SDN. BHD.	0.807920156			
	INPUT 1	20898912	16884652.24	-	-

	OUTPUT 1	94408039	94408039	0	0.00%
37	UNITED DETERGENT INDUSTRIES SDN. BHD.	0.412075488			
	INPUT 1	70784547	29168576.71	-	-
	OUTPUT 1	160698988	160698988	0	0.00%
38	BATA (MALAYSIA) SDN. BHD.	0.483670421			
	INPUT 1	101469000	49077553.93	-	-
	OUTPUT 1	268139000	268139000	0	0.00%
39	TSH PLANTATION SDN. BHD.	1			
	INPUT 1	68718264	68718264	0	0.00%
	OUTPUT 1	374131292	374131292	0	0.00%
40	WESTERN DIGITAL (MALAYSIA) SDN. BHD.	1			
	INPUT 1	3062588000	3062588000	0	0.00%
	OUTPUT 1	6197908000	6197908000	0	0.00%